UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

April 17, 2006

MEMORANDUM

SUBJECT: National Remedy Review Board Recommendations for the Grants Chlorinated Solvents Plume Superfund Site

FROM: David E. Cooper, Chair
National Remedy Review Board David E. Cooper

TO: Samuel J. Coleman, Director
Superfund Division
U.S EPA Region 6

Purpose

The National Remedy Review Board (NRRB) has completed its review of the proposed cleanup action for the Grants Chlorinated Solvents Plume (GCSP) site, located in the city of Grants, New Mexico. This memorandum documents the NRRB's advisory recommendations.

Context for NRRB Review

The Administrator announced the NRRB as one of the October 1995 Superfund Administrative Reforms to help control response costs and promote consistent and cost-effective decisions. The NRRB furthers these goals by providing a cross-regional, management-level, "real time" review of high cost proposed response actions prior to their being issued for public comment. The board reviews all proposed cleanup actions that exceed its cost-based review criteria.

The NRRB evaluates the proposed actions for consistency with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) and relevant Superfund policy and guidance. It focuses on the nature and complexity of the site; health and environmental risks; the range of alternatives that address site risks; the quality and reasonableness of the cost estimates

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for alternatives; regional, state/tribal, and other stakeholder opinions on the proposed actions, and any other relevant factors.

Generally, the NRRB makes advisory recommendations to the appropriate regional decision maker. The region will then include these recommendations in the administrative record for the site, typically before it issues the proposed cleanup plan for public comment. While the region is expected to give the board's recommendations substantial weight, other important factors, such as subsequent public comment or technical analyses of response options, may influence the final regional decision. The board expects the regional decision maker to respond in writing to its recommendations within a reasonable period of time, noting in particular how the recommendations influenced the proposed cleanup decision, including any effect on the estimated cost of the action. It is important to remember that the NRRB does not change the Agency's current delegations or alter in any way the public's role in site decisions.

Overview of the Proposed Action

The Grants Chlorinated Solvents Plume (GCSP) site, located in the city of Grants, New Mexico, is defined by an area of ground water that is contaminated by chlorinated solvents, primarily released by dry cleaning operations. The site is located in a primarily mixed commercial/residential area and encompasses about 12.25 acres. The primary contaminants are tetrachloroethylene (PCE), trichloroethylene (TCE), cis-1,2 -dichloroethylene, trans-1,2 – dichloroethylene and vinyl chloride. Other contaminants (benzene, toluene, xylene, and ethylbenzene) are commingled with this contaminant plume and come from leaking underground gasoline storage tanks and will not be directly addressed as part of this action. The chlorinated solvent problem has been divided into the following categories: Indoor Air contaminated by vapor intrusion, Source area soils, Shallow Ground Water Plume Core and Hot Spots, Shallow Ground Water Plume Periphery, and Deeper Ground Water. Alternatives for each of these categories were presented to the Board.

NRRB Advisory Recommendations

The NRRB reviewed the information package describing this proposal and discussed related issues on March 29, 2006 with attendees listed in the attachment. Based on this review and discussion, the board offers the following comments:

1. The site information package acknowledges that data characterizing subsurface conditions, contaminant distribution, fate and transport, and risk are limited. These unknowns produce significant uncertainties in the selection, design, and implementation of remedial options and the estimated costs and time frames associated with these options. The Board recommends that the Region consider a ROD that contains a phased approach that allows flexibility in remedy design and implementation as additional characterization and performance monitoring data become available. For example, Phase I could include actions to eliminate exposure to vapors intruding into homes and thermal treatment of the source area. Phase II could include remediation of the Shallow Ground

Water Plume Core and Hot Spot Area, along with shallow ground water peripheral plume and deep ground water actions.

2. The Board notes there is uncertainty regarding the existence of dense non-aqueous phase liquids (DNAPL) in the Shallow Plume Core and Hot Spot Area. As a result, the Board understands the concern expressed by the State of New Mexico that the enhanced reductive dechlorination (ERD) remedy may not be sufficiently effective. Therefore, the Board recommends that the Region consider the results of Phase 1 (as recommended in comment #1 above) and investigate the presence or absence of DNAPL in the Shallow Plume Core and Hot Spot Area prior to implementing a final remedy for this area.

3. The Board recommends, based on the results of Phase I and the investigations for the presence or absence of DNAPL, that the Region consider evaluating an alternative which uses ISCO followed by a less extensive ERD component for the Shallow Plume Core and Hot Spot Area. If ISCO is used to treat the Shallow Plume Core and Hot Spot Area aggressively, ISCO could address the potential DNAPL and significantly reduce the high concentrations of volatile organic compounds (VOCs) in ground water. The ERD component could then be optimized, which should result in a reduced number of wells, thus reducing cost. This approach would likely eliminate the bulk of the VOC contamination quickly, but may result in a longer timeframe to achieve cleanup levels. This approach may still be protective and consistent with the NCP expectation to restore ground water to beneficial use in a time frame that is reasonable given the particular circumstances of the site (e.g., given that the shallow aquifer is not currently being used).

4. The Board recommends that the Region further evaluate the implementation of ISCO as a remedial alternative in the Source Area. In the ISCO alternative presented to the Board for the Source Areas, significant costs are included for soil excavation and disposal, as well as trench dewatering and water treatment. However, the soil excavation and disposal and followed by trench dewatering and treatment components may not be required. ISCO can be an effective option for remediating organic contaminants in the unsaturated zone and its use in unsaturated zones is becoming increasingly common, thereby eliminating the need to excavate and dispose of contaminated soils. ISCO also could be used to treat organic compounds in water that collects in trenches. Oxidant injection and mixing directly in the trench would be easily implementable and likely to be successful at this site for oxidizing these contaminants, as well as for providing residual oxidant to the underlying aquifer through infiltration. Potential limitations to using the ISCO technology at the site given subsurface conditions at the site (soil, geologic, and hydrologic settings), as expressed by the New Mexico Environmental Department (NMED), also need to be considered. Further evaluation of these technical issues is recommended.

5. The Board agrees with the Region's preference not to include a zero-valent iron permeable reactive barrier as part of the preferred alternative. The clay and thin sandy layers present at the site may not lend themselves to this technology. Smearing of the clay along the face of the trench during excavation could significantly decrease

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permeability. Also, a barrier containing 100% iron and constructed to depths of 60 feet would need further study to demonstrate implementability and effectiveness. The Board recommends that the Region include a discussion of the potential limitations of installing such a deep trench and the likely decrease in permeability due to the 100% iron composition of the barrier in the decision documents to further explain its preference against this alternative.

6. As part of the Region's preferred alternative presented to the Board, vapor intrusion mitigation systems would be installed in three residential structures. Long-term indoor air monitoring would be undertaken at a larger number of residences situated above the ground water plume. Given the high costs of air monitoring in relation to the mitigation systems, the Board recommends that the Region consider expanding the installation of mitigation systems to all residences potentially impacted by indoor air contamination. In the event that long-term monitoring is chosen, homes above and in the proximity of the ground water plume, especially the homes near the Source Area, should be monitored to take into account preferential subsurface pathways that may exist at this site. The Board also recommends that the Region consider taking action under removal authorities at those occupied residences with vapor intrusion risks exceeding 1×10^{-4} lifetime excess cancer risk.

7. The Region's preferred remedial alternative for indoor air consists of the installation of three vapor mitigation systems and an indoor air monitoring program for a minimum period of five years. If the Region decides to implement the air monitoring program as described to the Board, then indoor air samples will be collected from within 14 structures overlying the groundwater plume where it exceeds a concentration of 1,000 ug/l perchloroethylene (PCE) in ground water. The Board suggests that the area to be considered for indoor air monitoring also be based on concentrations of trichloroethylene (TCE) in ground water. The Board recommends this because the Region's indoor air preliminary remediation goals (PRGs) are based on PCE *and* TCE, and the risks from TCE appear to be driving the indoor air response action more than PCE. The Board also recommends that the Region not define the study area too narrowly, considering the uncertainties in the correlation between TCE concentrations in ground water and vapor concentration.

8. It is unclear from the package presented to the Board whether benzene, toluene, ethylbenzene, xylene, and methyl tert-butyl ether (MTBE) are contaminants of concern for the site, because they are related to a different source and are being addressed by NMED-Petroleum Storage Tank Bureau. Similarly, the package does not provide much information on bromoform, but it is also identified as a contaminant of concern. The Region should be clear in decision documents whether these contaminants are actually contaminants of concern for the site. If they are, then remedial goals addressing these contaminants should be developed.

9. The Board recommends that the cost estimates provided be reviewed and, as appropriate, revised to ensure accuracy and consistent consideration of costs in the decision

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documents. The following are specific concerns identified by Board members that should, at a minimum, be addressed in this cost review:

a. Ground water pump and treat costs for the three zones are shown as individual cost estimates in the package. The decision documents should also contain information on the cost for pump and treat as a stand-alone, site-wide remedy. This alternative can clarify that all ground water pump and treat costs are not cumulative; for example, the cost to install the treatment plant will not be incurred a second time if pump and treat is selected for both Shallow Ground Water Plume Core and Deeper Ground Water.
b. The thermal treatment costs are not sufficiently itemized and appear to be low, based on the experience of other Regions.
c. The costs to conduct five-year review evaluations appear to be over-estimated based on the experience of other Regions.
d. The O&M for vapor intrusion remediation should not be zero, as the cost of blower replacements should be considered.
e. It was unclear to the Board how cost of treatability studies was included.
f. Costs for the ISCO alternative for the Source Area appear to be over-estimated based on the experience of other Regions. See comment 4 on components that may warrant reconsideration.

10. Based on the information presented to the Board, the Board understands that the Region has been planning to implement the remedy in the primary Source Area while leaving the relatively large building housing the dry cleaner in place. Because the effectiveness of the shallow ground water remedy is dependent on thorough removal of the Source Area, the Region should fully evaluate the effectiveness of any remedy for the area under the building.

11. The Board notes that the New Mexico soil screening guidance is not an Applicable or Relevant and Appropriate Requirement (ARAR). It might be a "to be considered" guidance under the National Contingency Plan for the soil cleanup itself. The Board recommends that the Region explain the role, if any, of the soil screening guidance in selecting soil cleanup levels for ground water protection, where maximum contaminant levels are ARARs at this site.

12. The preferred alternative includes monitored natural attenuation (MNA) as a contingent remedy. However, no data were presented to the board to demonstrate that MNA is occurring or will occur in the future; consequently, the Board cannot evaluate the effectiveness of MNA. However, based on the presentation and discussion at the meeting, the Board recommends that the Region consider MNA as a component of the preferred alternative which will follow active remediation rather than as a contingent remedy if the active remedy does not work. Active remediation can be used to significantly reduce the mass of contamination, with the MNA component used to achieve final cleanup levels. The Board recommends that the Region clarify in the decision documents how MNA may be triggered and its technical basis, consistent with Use of Monitored Natural Attenuation at Superfund, RCRA, Corrective Action, and Underground Storage Tank Sites, OSWER Directive 9200.4-17P, April 21, 1999.

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13. The Board notes that one of the costs associated with site cleanup appears to be payment of State tax on engineering services. The Board encourages the Region's efforts in working with the State to reach agreement on issues involving a waiver of this tax. The Board recommends for this situation that the Region ensure that the New Mexico tax be handled in a manner that is consistent with the Agency's ongoing cost management initiative.

The NRRB appreciates the region's efforts in working together with the potentially responsible parties, state, and community groups at this site. We request that a draft response to these findings be included with the draft Proposed Plan when it is forwarded to your OSRTI Regional Support Branch for review. The Regional Support Branch will work with both me and your staff to resolve any remaining issues prior to your release of the Proposed Plan. Once your response is final and made part of the site's Administrative Record, then a copy of this letter and your response will be posted on the NRRB website.

Thank you for your support and the support of your managers and staff in preparing for this review. Please call me at (703) 603-8763 should you have any questions.

cc: M. Cook (OSRTI)
E. Southerland (OSRTI)
S. Bromm (OSRE)
J. Woolford (FFRRO)
Rafael Gonzalez (OSRTI)
NRRB members

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Attachment:

Attendees at the Grants Chlorinated Solvents discussion, March 29, 2006:

From USEPA Region 6, Superfund Division:
Sairam Appaji, Remedial Project Manager,
Donald Williams, Section Chief,

From New Mexico Environment Department:
Dana Bahar, Section Chief, Ground Water Quality Bureau, Superfund Oversight Section
William Olson, Branch Chief, Ground Water Quality Bureau
Cynthia Padilla, Division Director

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